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Examiner: Theresa T. Snider
Group Art Unit: 1744

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A vacuum cleaner comprising:
 - a housing defining a cyclonic airflow chamber for separating contaminants from a dirt-containing airstream, said housing further comprising a cyclonic chamber inlet and an airstream outlet in fluid communication with said cyclonic airflow chamber;
 - a nozzle housing including a suction opening, said suction opening being fluidly connected with said cyclonic chamber inlet;
 - an airstream suction source fluidly connected to said main suction opening and to the cyclonic airflow chamber for transporting dirt-containing air from the main suction opening to the cyclonic airflow chamber, said suction source is adapted to establish and maintain a dirt-containing airstream from said main suction opening to said cyclonic chamber inlet;
 - a dirt-collecting bin mounted beneath said cyclonic airflow chamber, the dirt-collecting bin comprising a bottom wall and a cylindrical sidewall;
 - a separator plate between the cyclonic airflow chamber and the dirt-collecting bin and separating the cyclonic airflow chamber from the dirt-collecting bin, the separator plate having a diameter less than a diameter of the cyclonic airflow chamber adjacent the separator plate to thereby define a gap between the separator plate and the cyclonic airflow chamber for passage of dirt separated from the dirt-containing airstream in the cyclonic airflow chamber whereby the passage of dirt through the gap is accompanied by airflow patterns having horizontal and vertical components between the gap at one side of the dirt-collecting bin and the bottom wall at an opposite side of the dirt-collecting bin, which airflow tends to entrain dirt particles therein; and
 - airflow inhibitors in the dirt-collecting bin to reduce the vertical component of an elliptical airflow, thereby tending to agglomerate and separate the dirt particles from the elliptical airflow.

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2. (Previously Presented) The vacuum cleaner according to claim 1 wherein the airflow inhibitors comprise at least one prong extending upwardly from the bottom wall of the dirt-collecting bin and positioned radially between a center of the dirt-collecting bin and the sidewall thereof.

3. (Previously Presented) The vacuum cleaner according to claim 2 wherein there are a plurality of said prongs each positioned radially between a center of the dirt-collecting bin and the sidewall thereof.

4. (Previously Presented) The vacuum cleaner according to claim 3 wherein the prongs extend a portion of the distance between the bottom wall and the separator plate.

5. (Previously Presented) The vacuum cleaner according to claim 3 wherein the prongs are rectangular in cross section.

6. (Currently Amended) The vacuum cleaner according to claim 5 wherein the prongs in cross-section have a long axis that is radially disposed in the dirt-collecting bin.

7. (Previously Presented) The vacuum cleaner according to claim 3 wherein the prongs are equal- angularly spaced about the bottom wall of the dirt-collecting bin.

8. (Previously Presented) The vacuum cleaner according to claim 3 wherein the airflow inhibitors further comprise at least one fin that extends radially inwardly from the sidewall of the dirt-collecting bin.

9. (Previously Presented) The vacuum cleaner according to claim 2 wherein the airflow inhibitors further comprise at least one fin that extends radially inwardly from the sidewall of the dirt-collecting bin.

10. (Previously Presented) The vacuum cleaner according to claim 9 wherein there are two and only two fins.

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11. (Previously Presented) The vacuum cleaner according to claim 10 wherein the fins are generally positioned vertically below the inlet.

12. (Previously Presented) The vacuum cleaner according to claim 9 wherein the at least one fin is positioned vertically below the inlet.

13. (Previously Presented) The vacuum cleaner according to claim 12 wherein the at least one fin extends a portion of the distance between the bottom wall and the separator plate.

14. (Previously Presented) The vacuum cleaner according to claim 13 wherein the at least one fin extends between 40% and 60% of the distance between the bottom wall and the separator plate.

15. (Previously Presented) The vacuum cleaner according to claim 9 wherein the fins have a radial dimension between 2% and 10% of the radius of the dirt-collecting bin.

16. (Previously Presented) The vacuum cleaner according to claim 9 wherein the fins have a radial dimension between 3% and 6% of the radius of the dirt-collecting bin.

17. (Previously Presented) The vacuum cleaner according to claim 9 wherein the fins have a radial dimension equal to about 4% of the radius of the dirt-collecting bin.

18. (Previously Presented) The vacuum cleaner according to claim 1 wherein the airflow inhibitors comprise at least one fin that extends radially inwardly from the sidewall of the dirt-collecting bin.

19. (Previously Presented) The vacuum cleaner according to claim 18 wherein there are two and only two fins.

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20. (Previously Presented) The vacuum cleaner according to claim 19 wherein the fins are generally positioned vertically below the inlet.

21. (Previously Presented) The vacuum cleaner according to claim 19 wherein the fins extend a portion of the distance between the bottom wall and the separator plate.

22. (Previously Presented) The vacuum cleaner according to claim 19 wherein the fins have a radial dimension between 2% and 10% of the radius of the dirt-collecting bin.

23. (Previously Presented) The vacuum cleaner according to claim 22 wherein the fins have a radial dimension between 3% and 6% of the radius of the dirt-collecting bin.

24. (Previously Presented) The vacuum cleaner according to claim 23 wherein the fins have a radial dimension equal to about 4% of the radius of the dirt-collecting bin.

25. (Previously Presented) The vacuum cleaner according to claim 18 wherein the at least one fin is positioned generally below the inlet.

26. (Previously Presented) The vacuum cleaner according to claim 18 wherein the at least one fin extends a portion of the distance between the bottom wall and the separator plate.